

INTERNATIONAL SEARCH REPORT

International application No.
PCT/AU2004/000899

A. CLASSIFICATION OF SUBJECT MATTER

Int. Cl. 7: B22F 9/18, 9/20, C22C 14/00, 21/00, 45/08, 45/10, C01F 7/00, C01G 23/00

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)
DWPI: B22 9/-, C22B 5/04, 34/10, 34/12; C22C 1/00, 1/04, 1/05, 21/-, 14/-; C01F 7/00, 23/00 and keywords for Al/Aluminium, Ti/titanium and +chloride+. Chemical Abstracts Online keywords as above with others for metals/alloys, powders and reduction.

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	OKABE, et. al., "Reaction Pathways during Metallothermic Reduction of TiCl ₄ by Utilizing Chemical Potential Diagrams," <i>Titanium Extracting and Processing</i> , editors B. Mishra and G. J. Kipouros, The Minerals, Metals and Materials Society, 1997, pp 133-150, See especially pp. 147-150 (note in particular the phase diagram for the Ti subchloride - Al systems on pages 148-149).	1-6, 8-26, 28-42
X	Derwent Abstracts Accession No. 58145Y/33, Class E32, JP 52-078608 A (ARITA KENKYUSHO KK) 2 July 1977. See Abstract	1-6, 8-26, 28-42
X	Derwent Abstracts Accession No. 98-050427/05, Class M22, RU 2082561 C (TITANIUM MAGNESIUM RESEARCH INST. STOCK. CO.) 27 June 1997. See Abstract	1-6, 8-26, 28-42

☒ Further documents are listed in the continuation of Box C

☒ See patent family annex

* Special categories of cited documents:	"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
"A" document defining the general state of the art which is not considered to be of particular relevance	"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
"E" earlier application or patent but published on or after the international filing date	"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art
"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)	"&" document member of the same patent family
"O" document referring to an oral disclosure, use, exhibition or other means	
"P" document published prior to the international filing date but later than the priority date claimed	

Date of the actual completion of the international search
21 July 2004

Date of mailing of the international search report
29 JUL 2004

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C (Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT		
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	DeKOCK, et. al., "Attempted Preparation of Ti-6-4 Alloy Powders from $TiCl_4$, Al, VCl_4 and Na," <i>Metallurgical Transactions B</i> , Vol. 18B, September 1987, pp 511-517	1-6, 8-26, 28-42
X	BARTLETT, et. al., "Titanium Powder by Magnesium Reduction of $TiCl_4$ in Liquid Zinc Alloy," <i>Light Metals 1994</i> (edited by U. Mannweiler), The Minerals, Metals and Materials Society, 1994, pp. 1181-1186. See in particular the final paragraphs on page 1186.	1-6, 8-26, 28-42
X	US 5460642 A (LELAND) 24 October 1995. See abstract.	1-6, 8-26, 28-42
X	US 5032176 A (KAMETANI et. al.) 16 July 1991. See column 12 lines 51-68.	1-6, 8-26, 28-42
X	WO 1992/014851 A (THE UNIVERSITY OF MELBOURNE) 3 September 1992.	1-6, 8-26, 28-42
X	EP 134643 A (SOLEX RESEARCH CORPORATION OF JAPAN) 20 March 1985.	1-6, 8-26, 28-42
X	DE 2747016 A (TOYO SODA MANUFACTURING CO. LTD.) 27 April 1978. & Derwent Abstracts Accession No. 32433A/18, Class E32.	1-6, 8-26, 28-42
X	Derwent Abstracts Accession No. 2001-592638/67, Class M22, JP 2001-192711 A (TOHO TITANIUM CO. LTD.) 17 July 2001.	1-6, 8-26, 28-42
X	US 4508322 A (KIMURA et al) 2 April 1985 See Abstract	29-31
X	EP 97135 A (ISHIZUKA) 28 December 1983 See Abstract	29-31
X	GB 1566363 A (VSESOJUZNY NAUCHNO-ISSLEDOVATELSKY I PROEKTNY INSTITUT TITANA et al) 30 April 1980	29-31
X	EP 298698 B1 (TOHO TITANIUM CO. LTD.) 11 January 1989	29-31

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This Annex lists the known "A" publication level patent family members relating to the patent documents cited in the above-mentioned international search report. The Australian Patent Office is in no way liable for these particulars which are merely given for the purpose of information.

Patent Document Cited in Search Report		Patent Family Member			
JP	52078608				
RU	2082561				
US	5460642	AU	21595/95	WO	9525824
US	5032176	DE	4016502	GB	2231883
				JP	2311316
WO	9214851	AU	12741/92	US	5397375
		US	5788948	US	5482691
EP	0134643	AU	30262/84	JP	60017026
				JP	60017027
DE	2747016	JP	53050099		
JP	2001192711				
US	4508322	CA	1218523	FR	2545106
		NO	840790	JP	59226127
EP	0097135	AU	14524/83	CA	1202183
		JP	59080593	NO	831930
				US	4565354
GB	1566363				
EP	0298698	AU	18824/88	JP	1015334
				US	4877445
Due to data integration issues this family listing may not include 10 digit Australian applications filed since May 2001.					
END OF ANNEX					